

REMARKS

Reconsideration and allowance of the subject application are respectfully solicited in view of the foregoing amendments and the following remarks.

Status of the Claims

Claims 1 through 6 are pending, with Claims 1 and 4 being independent. Claims 1 and 4 have been amended. Support for the claim amendments can be found in the original disclosure, for example, in Figs. 8A, 8B, and 9, and the accompanying disclosure, such as at page 43, lines 3-13, and therefore, no new matter has been added.

Rejection

Claims 1-2, 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orava et al. (United States Patent 5,812,191) in view of Yamamoto et al. (United States Patent 7,098,950), and Shimizu (United States Patent 6,567,125). Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orava et al. in view of Yamamoto et al., Shimizu, and Kozuka (U.S. Patent No. 6,163,024). These rejections are respectfully traversed for the following reasons.

A. Claim 1

Claim 1 relates to an image pickup apparatus in which a pixel area, including a plurality of pixels, each having a photoelectric conversion portion and a common output portion configured to amplify and output signals of the plurality of pixels included in the pixel area, are formed on a single semiconductor substrate. The apparatus comprises a power supply unit

configured to control power supply to the common output portion independently of controlling the power supply to the plurality of pixels, a determination unit configured to determine the length of a photo-charge accumulation period of the photoelectric conversion portion in accordance with an exposure detected by photometry processing and a photographing mode, and a control circuit configured to control the power supply unit in accordance with the length of the photo-charge accumulation period of the photoelectric conversion portion determined by the determination unit.

Claim 1 has been amended to recite that the control circuit performs its control of the power supply such that if the photo-charge accumulation period of the photoelectric conversion portion is determined to be longer than a predetermined accumulation time, the power supply unit stops power supply to the common output portion for a predetermined period after starting photo-charge accumulation in the photoelectric conversion portion, starts supplying power to the common output portion before the end of the photo-charge accumulation period of the photoelectric conversion portion and then stops supplying the power to the common output portion after all the signals of the plurality of pixels are output from the common output portion, and if the length of the photo-charge accumulation period of the photoelectric conversion portion is determined to be shorter than a predetermined accumulation time, the power supply unit continues to supply the power to the common output portion throughout the photo-charge accumulation period without switching the power supply thereto.

In contrast, the citations to the citations to Orava et al., Yamamoto et al., and Shimizu are not understood to disclose or suggest a control circuit that performs its control of the power supply such that if the photo-charge accumulation period of the photoelectric conversion portion is determined to be longer than a predetermined accumulation time, the power supply unit stops

power supply to the common output portion for a predetermined period after starting photo-charge accumulation in the photoelectric conversion portion, starts supplying power to the common output portion before the end of the photo-charge accumulation period of the photoelectric conversion portion and then stops supplying the power to the common output portion after all the signals of the plurality of pixels are output from the common output portion, and if the length of the photo-charge accumulation period of the photoelectric conversion portion is determined to be shorter than a predetermined accumulation time, the power supply unit continues to supply the power to the common output portion throughout the photo-charge accumulation period without switching the power supply thereto, as recited by amended Claim 1.

Rather, the Orava et al. citation is understood to disclose the reading out of signals of a plurality of pixels, the Yamamoto et al. citation is understood to show that a power source voltage is supplied to a block BL1 in a light integration period and the power source voltages are supplied to the blocks BL1 and BL2 in a reading-out period, as discussed in column 8, and the Shimizu citation is understood to disclose, at column 4, lines 54-58 that “When the camera control circuit 12 receives the exposure starting signal, it simultaneously outputs a power control signal to the output amplifier power source circuit 68, thereby decreasing power fed from the output amplifier power source circuit 68 to an output amplifiers 62”. The Office Action states that the Shimizu publication discloses the determination unit and control circuit recited in Claim 1. However, Applicant submits that this citation does not disclose the control circuit as now amended, which recites the stopping, starting, and stopping of the supply of power, in accordance with the length of the photo-charge accumulation period determined by the determination unit, as recited by amended Claim 1. Rather, the Shimizu citation is understood to merely disclose to decrease, in response to the exposure start signal and exposure completion

signal, the power to be supplied to an output amplifier. Applicant can find no disclosure of a control unit arranged to start and stop supplying the power from the power supply unit to a common output portion at the specific timings recited in amended Claim 1, which are not recited to depend upon of the exposure time period.

Since amended Claim 1 recites at least one feature not understood to be disclosed or suggested by the citations to Orava et al., Yamamoto et al., and Shimizu, Applicant submits that the Office has not yet satisfied its burden of proof to establish a prima facie case of obviousness against amended Claim 1. Therefore, Applicant respectfully requests that the rejection of amended Claim 1 be withdrawn.

B. Claim 4

Independent Claim 4 has been amended to recite a control circuit configured to control the power supply unit in accordance with the length of the photo-charge accumulation period of the photoelectric conversion portion determined by the determination unit such that if the photo-charge accumulation period of the photoelectric conversion portion is determined to be longer than a predetermined accumulation time, the power supply unit supplies power of the second power level to the common output portion for a predetermined period after starting photo-charge accumulation in the photoelectric conversion portion, starts supplying the first power level to the common output portion before the end of the photo-charge accumulation period in the photoelectric conversion portion and then stops supplying the first power level to the common output portion after all the signals of the plurality of pixels are output from the common output portion, and if the photo-charge accumulation time of the photoelectric conversion portion is determined to be shorter than a predetermined accumulation time, the power supply unit

continues to supply the first power level to the common output portion throughout the photo-charge accumulation period without switching the power supply thereto.

In contrast, the citations to the citations to Orava et al., Yamamoto et al., and Shimizu are not understood to disclose or suggest such a control circuit.

Since amended Claim 4 recites at least one feature not understood to be disclosed or suggested by the citations to Orava et al., Yamamoto et al., and Shimizu, Applicant submits that the Office has not yet satisfied its burden of proof to establish a prima facie case of obviousness against amended Claim 4. Therefore, Applicant respectfully requests that the rejection of amended Claim 4 be withdrawn.

The dependent claims are also submitted to be patentable because they set forth additional aspects of the present invention and are dependent from independent claims discussed above. Therefore, separate and individual consideration of each dependent claim is respectfully requested.

Conclusion

In view of the above amendments and remarks, Applicant submits that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

/Gary M. Jacobs /
Gary M. Jacobs
Attorney for Applicant
Registration No. 28,861

FITZPATRICK, CELLA, HARPER & SCINTO
1290 Avenue of the Americas
New York, NY 10104-3800
Facsimile: (212) 218-2200
DSG/GMJ/jjr